B0467

A meta-analysis of clinical and radiographic outcomes of posterior horn medial meniscus root repairs

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Background: Although interest in medial meniscus posterior root tear (MMPRT) repair has increased, few case series have been reported. This meta-analysis aimed to examine the clinical and radiological effects of MMPRT repair by pooling pre- and post-operative data from case-series reports.
Materials and Method: A literature search was performed using MEDLINE/PubMed, the Cochrane Central Register of Controlled Trials, and EMBASE databases. Pre- and post-operative data were pooled to investigate the effects of MMPRT repair, including the Lysholm score improvement, meniscal extrusion (mm) reduction, progression of the Kellgren–Lawrence (K–L) grade, and cartilage status according to the Outerbridge classification. Treatment effects included paired standardized mean differences (difference in the preand post-operative mean outcomes divided by the standard deviation) for the Lysholm score and meniscal extrusion, as well as the pooled event rates of progression of K–L grade and cartilage status.
Results: As treatment effects, the Lysholm score increased by as much as 3.675 ($P < 0.001$), whereas meniscus extrusion was not reduced (n.s.). The overall pooled event rates of progression of K–L grade and cartilage status were 10.6 and 17.3 % ($P < 0.001$), respectively.
Discussion: The most notable finding is that subjective improvement was seen in patients undergoing MMPRT repair with little change in meniscus extrusion and low rates of degenerative progression.
Conclusions: According to the current literature, MMPRTrepair resulted in significant improvements in the postoperative clinical subjective scores compared with the preoperative status. However, meniscus extrusion was not reduced. Considering the occurrence of progression of K–L grade and cartilage status, it did not prevent the progression of arthrosis completely. Based on these results, repair results in favourable outcomes for MMPRT.
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B0476

Remnant augmentation technique with LARS or autologous hamstring graft to early reconstruct posterior cruciate ligament

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Objective: To prospectively research the treatment results of posterior cruciate ligament injury using remnant augmentation technique with LARS ligament or autologous hamstring tendon for substitute.
Methods and materials: 62 cases of PCL injury were randomly allocated into LARS group and autologous hamstring tendon group, involving independent PCL injury in 20 cases, PCL with medial meniscus injury in 8 cases, PCL with ACL injury in 18 cases, PCL with medial collateral ligament injury in 7 cases, PCL with posterolateral structure injury in 9 cases. The LARS reconstruction was used in 35 cases, autologous hamstring tendon reconstruction in 27 cases. The remnant and synovium of PCL were preserved in both groups.
Results: Immediate stability was achieved after operation in all cases, with confirmation of anterior and posterior drawer test (-). No complications such as healing problem, intraarticular infection and synovitis occurred. The average follow-up time was 27months, and the LARS group had significantly sooner return to daily sports than autologous substitute group. The Lysholm score of latest examination were significantly higher than preoperative data in both groups, however no statistical difference between two groups (87 ± 3.5 vs. 48.6 ± 3.6, $P < 0.01$ for LARS group and 83.4 ± 2.3 vs. 51.2 ± 3.8, $p<0.01$ for autologous substitute group)
Conclusion: The abundant blood supply confers a good self healing capability of PCL. Early reconstruction should be recommended for acute or subacute PCL rupture, especially when associated with other ligament injury. The reconstructed substitute was parallel with ruptured ligament and restored the knee stability, actually working as "external fixator" for PCL remnant to facilitate the healing procedure. Furthermore, the remnant augmentation technique does not need debridement of PCL stump from posterior portal. LARS artificial ligament merits at shorter surgery longevity, sooner recovery and less invasive than autologus grafting, thus should be considered as an encouraging substitute for multiple ligament injury.
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B0482

Arthroscopic debridement of talar cyst and bone grafting by using OATS: A case report

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Background: Bone tumors of the feet are one of the most difficult problems for foot and ankle surgeons and most of them are reported to be benign. Of these, simple bone cysts are rare but reported to have aggressive lesions which may affect any of the talus. Nowadays, arthroscopic approach is considered to be the effective and less invasive treatment for talar cyst. However, careful pre-operative simulation should be done to approach them. Here, we present the arthroscopic debridement with OATS and bone grafting for bone cyst in the medial part of the talus.
Case report: A 65-year-old woman feels her left ankle pain for three years. Her symptom continued and became worse, and she was introduced to our institution. Physical examination revealed tenderness in the medial side of her ankle and she felt it even at rest. She also noticed the symptom increased to whole ankle joint with the long standing and walking. But no apparent inflammatory findings such as swelling and redness were observed in her ankle. The American Orthopaedic Foot and Ankle Society (AOFAS) score was 87 points when she first visit us but was worsened to 77 points. Radiographs showed that no joint space narrowing in her ankle and about 1.5 cm radiolucent zone in her talus Computed tomography (CT) revealed that 1.8 X 1.0cm cystic lesions in the medial side of her talus. Iso intensity lesion was observed in T1-weighted Magnetic resonance imaging (MRI) and high intensity in T2 MRI. Contrast effect was observed in the edge of the tumor. Therefore, we diagnosed it as a talar cyst and decided to perform the operation of arthroscopic debridement and artificial bone grafting. Under general anesthesia, patient was placed supine position with traction and thigh tourniquet. 2.7mm and 30 degrees perspective arthroscopy was prepared. When we examined her ankle joint, articular cartilage was almost intact in both talar dome and tibial plateau. At the center of the medial talus, we found a 5×5mm fibrillation of cartilage where we noticed sinking by probe. Neither obvious peeling nor abnormal mobility of cartilage were observed in her cartilage. After cauterizing the fibrillation, we stopped arthroscopy and released the spider traction. Next, about 3 cm skin incision was added distally at the medial portal site. After retraction of tibialis anterior inside, we confirmed the boundaries of the trochlea and the neck of talus. Using 8mm recipient of Osteochondral Autograft Transfer System (OATS) (Arthrex, Inc., Florida, USA), we proceeded about 12 mm implantation aiming tumor. After pulling out the cylindrical bone plug, we observed the white tissue that must be the surface of tumor. Therefore, we continued the operation with the insertion of arthroscopy into the tissue. Tumors were removed using punch, shaver and curette and were submitted to pathology as possible. After washing, we packed firmly the granules of β-tricalcium phosphate (β-TCP) (Nippon paramedics Ltd., Tokyo Japan) as much as possible. Then, we implanted the cylindrical bone plug obtained by OATS with much attention not to mistake the direction of it. Because the fixation of the plug was very good, we decided not to perform screw fixation. We settled non weight bearing period for 2 weeks with short leg splint and started one third partial weight bearing with supporter after that. Full weight bearing was allowed from 6 weeks post-operation. After 5 months post-operation, she came back to her work of caregiver with the 100 points of AOFAS scores.
Discussion: Talar cyst are very rare and Shears E. et al. reported that the percentages of the talus with suspected bone tumors was 0.003%' at their institution. Talar cysts include simple bone cyst, intraosseous ganglion, and aneurysmal bone cyst and we often have difficulty in diagnosing them only by radiographs. However, the advances of diagnostic devices such as CT and MRI and surgical techniques made us possible to provide safe, secure medical treatment with patients. Now, we recognize that arthroscopic procedures can minimize damage to patients and allow them to start rehabilitation and to return to their daily activities much earlier with excellent clinical results. Especially, some articles about the posterior approach for talar cyst by arthroscopy has been reported. However, as for the treatment of the relatively large cyst in the medial lesion of the talus, the curettage with malleolar osteotomy is generally considered. In case of such an open surgery, we must always pay attention not to injure the saphenous vein, tendon and other neurovascular structures with the risk of malleolar non- or malunion. Recently, OATS techniques are widely used for the repair of joint cartilage defect with arthroscopic operation. Although rare, OATS are also reported as a unique hardware removal. In our case, we considered that we could reduce the invasion to the patient by approaching to the talar cyst anteriorly with OATS because the cyst was about 1cm distance from the front of talus.
Conclusion: The arthroscopic debridement with OATS have the potential to be an effective way for approaching to the talar cyst in the medial part of the talus.
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B0484

Effects of releasing the superficial medial collateral ligament in medial open-wedge high tibial osteotomy

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Background: Medial Open-Wedge High Tibial Osteotomy (MOWHTO) has been a useful surgical options for medial osteoarthritis (OA) of the knee. To perform a MOWHTO, surgeons frequently expose the medial-proximal tibia by partial or complete distal release of the overlying insertion of the superficial layer of medial collateral ligament (sMCL) for osteotomy and decompression of the medial joint compartment. Biomechanically, the sMCL is the primary restraint to valgus forces and plays a significant role in restraining external rotation. Therefore, any release of the MCL can lead to valgus instability of the knee joint. However, clinically, post-surgical valgus instability following HTO with the sMCL release remains unclear. The purpose of this study was to clarify the postoperative valgus instability after MOWHTOwhen the sMCL is released.